ZENITH ELECTRONICS CORPORATION
1000 MILWAUKEE AVENUE
GLENVIEW, ILLINOIS 60025

Printed in U.S.A.

206-01282
PM-EDC

GETTING THE MOST OUT OF YOUR ANTENNA

ZENITH®

TV ANTENNA CONNECTION GUIDE

HOW TO MAKE THE RIGHT CONNECTIONS...

This guide is designed to help you properly connect and use your indoor or outdoor antenna.

Proper connection and use will ensure that your antenna is providing all the signal needed to deliver a clear, sharp TV picture.

We urge you to read this guide carefully and follow the recommendations to help you obtain enjoyable, virtually problem-free picture reception from your TV, modular TV, or Video Cassette Recorder.

All TVs will work in most locations with either an indoor or outdoor antenna. Whenever possible, use of an outdoor antenna is recommended. The proper antenna reduces or eliminates problems from weak signal reception.

Should you have signal reception problems, remember that your Zenith dealer or any Distributor-approved Zenith Service Center knows your TV best, has the most effective antenna and antenna accessories for your area, and is dedicated to your satisfaction.

...IN CONNECTING YOUR:

Indoor Antenna 1
Outdoor Antenna . . . . . 2 thru 7
Cable Television (CATV) 8
Cable Television (CATV) with Decoder 8
Remote Control Tuning 9
Remote Antenna Switch Accessory 10
Video Organizer 10

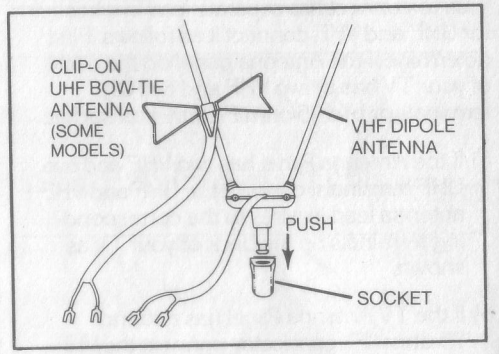
SOME THINGS TO KNOW ABOUT:

Indoor and Outdoor Antennas 11
When You Need a New Outdoor Antenna 11
Selecting a New Antenna 11
Antenna Signal Boosters (Amplifiers) 12
Installing an Outdoor Antenna 12
Grounding an Outdoor Antenna 12
Zenith Antenna and Accessory Equipment 13

CONNECTING YOUR INDOOR ANTENNA

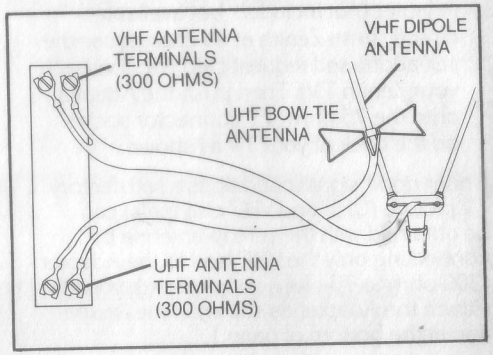
PORTABLE AND TABLE MODEL TV (Using Furnished Antenna)

All Zenith portable and some table model TVs are sold with a detachable indoor VHF dipole (rabbit ears) antenna. Some TVs also have a clip-on bow-tie UHF antenna. To install, push the dipole antenna into the socket on the back of your TV as shown. Push down until the base snaps into position. (To remove the antenna, turn it 90 degrees in relation to the TV and pull it up.) If a bow-tie antenna is included, clip it onto one of the telescoping VHF antenna rods.

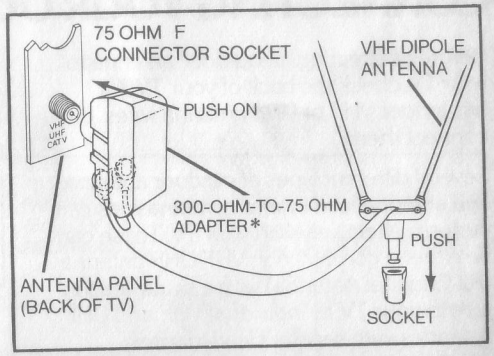


The Antenna Panel on the back of your TV will have either a) two VHF and two UHF terminals, or b) a 75 ohm "F" connector socket:

a) If the Antenna Panel has two VHF and UHF terminals, connect the VHF and UHF antenna lead wires to the corresponding terminals on the back of the TV as shown.



b) If the Antenna Panel has an "F" connector socket, connect VHF dipole antenna lead wires to the special Adapter (300-ohm-to-75 ohm) supplied with your TV. Then push the Adapter onto the connector socket on the back of your TV as shown. No bow-tie antenna is needed, for UHF channel reception.



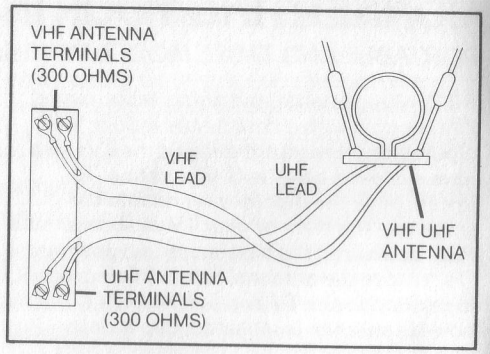
For viewing VHF channels, extend the telescoping antenna rods fully. Place them in a moderate "V" position and rotate them until you get the best picture. *For viewing UHF channels,* shorten the telescoping rods and rotate them until you get the best picture.

* Replace Adapter only with Zenith Part No. A-9521-02.

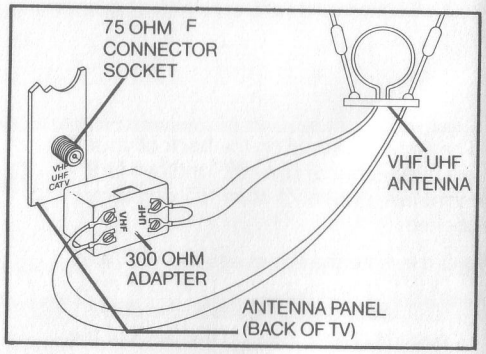
CONSOLE AND SOME TABLE MODEL TVs (Using a Cabinet-Top Antenna)

If you want to use an indoor antenna, you can buy a Zenith all-channel antenna to put on top of the TV cabinet. If the antenna you wish to connect has separate lead-in wires for UHF and VHF, connect it as follows. First determine if the Antenna panel on the back of your TV has a) two VHF and two UHF terminals or b) a 75-ohm F-connector socket.

a) If the Antenna Panel has two VHF and two UHF terminals, connect the UHF and VHF antenna lead-in wires to the corresponding terminals on the back of your TV as shown.



b) If the TV Antenna Panel has a round 75 ohm "F" connector, connect the VHF and UHF lead-in wires to the corresponding terminals on an Antenna Combiner Adapter (not included, but available directly from Zenith at no charge; see the self-addressed request card enclosed with your Zenith TV). Then push the Adapter onto the 75 ohm "F" connector socket on the back of your TV as shown.



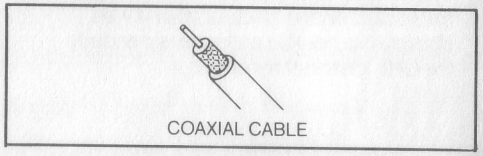
Under good signal conditions a satisfactory TV picture (UHF and VHF channels) can be obtained with the set-top antenna by connecting only the VHF lead to the Adapter (300-ohm-to-75-ohm) supplied with your TV. Attach the Adapter as shown in the illustration at the bottom of page 1.

CONNECTING YOUR OUTDOOR ANTENNA

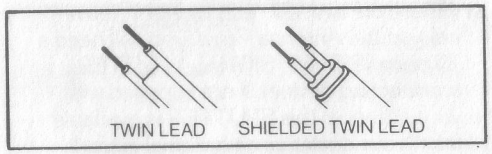
Before connecting an outdoor antenna to your TV, check the back of your TV. If it has indoor VHF or UHF antenna wires, disconnect them.

Several different types of outdoor antenna and antenna lead-in wire combinations can perform effectively with your TV. These can be either a combination VHF-UHF antenna (All-Channel Antenna) with a single lead-in wire to your TV, or individual VHF and UHF antennas with separate lead-in wires as follows:

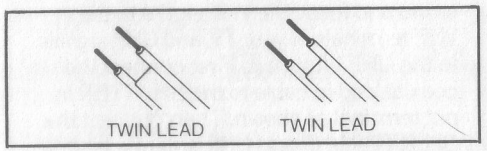
a. **All-Channel VHF-UHF antenna** with one round (75 ohm), coaxial lead-in cable as shown.



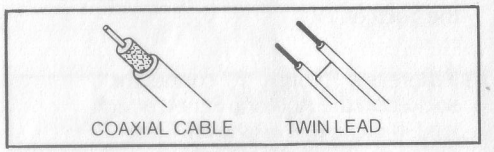
b. **All-Channel VHF-UHF antenna** with one flat (300 ohm), ribbon-type, twin-lead cable (shielded or unshielded) as shown.



c. **Separate VHF and UHF antennas,** each one with a flat, ribbon-type, twin-lead cable.



d. **Separate VHF and UHF antennas,** one (VHF) with a round coaxial lead-in cable and one (UHF) with a flat, ribbon-type, twin lead cable.



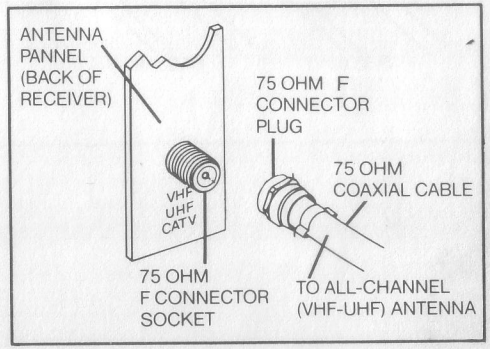
Compare the lead-in wires from your outdoor antenna to identify the kind you have. Read the following instructions carefully and select the connection instructions which match your particular antenna and antenna lead-in wire.

A. ALL-CHANNEL VHF-UHF ANTENNA WITH ONE ROUND (75 ohm) CABLE (Including Master TV Antenna*).

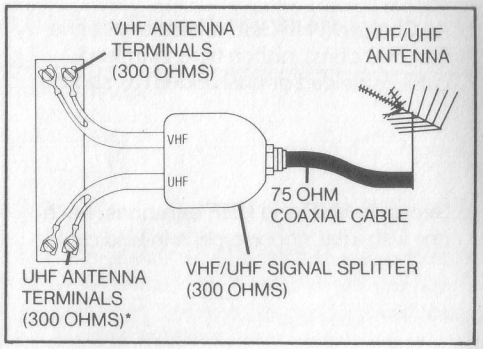
*(NOTE: *Master TV Antenna System* – Many apartment buildings are served by a single all-channel (VHF and UHF) antenna system. The signal from this antenna is amplified and distributed to each apartment and terminates in a special wall outlet.)

Connection:

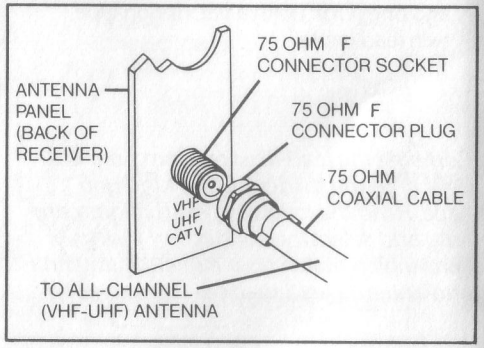
Check to see that the coaxial lead-in cable (75 ohm) has an "F" connector plug as shown (if it does not, it is available from your Zenith dealer). Then determine if the Antenna Panel on back of the TV has either a) two VHF and two UHF terminals, or b) a 75 ohm "F" connector socket:



a) If there are two VHF and two UHF terminals on the Antenna Panel, you will need a 75 ohm VHF-UHF SIGNAL SPLITTER (connecting device). If not supplied with your antenna, this SPLITTER is available from your dealer as an optional extra. It separates the two signals from your antenna and feeds the VHF signal to the VHF terminals of your TV, and UHF signals to the UHF terminals. First connect the coaxial lead-in cable to the SPLITTER input terminal as shown. Then connect the SPLITTER VHF and UHF antenna lead wires to the corresponding terminals on the back of TV.



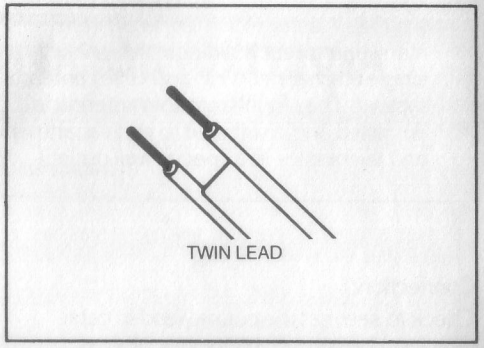
b) If there is a 75 ohm "F" connector socket on the Antenna Panel, attach lead-in cable to it as shown. Turn collar on "F" connector plug to secure the connection.



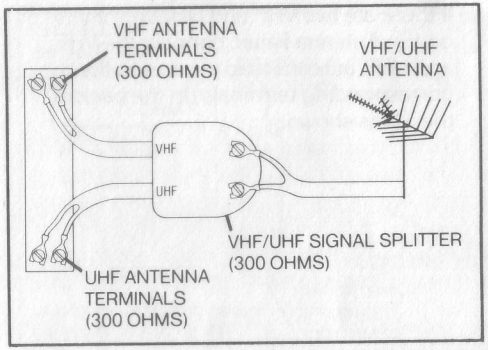
B. ALL-CHANNEL VHF-UHF ANTENNA WITH ONE FLAT CABLE.

Connection:

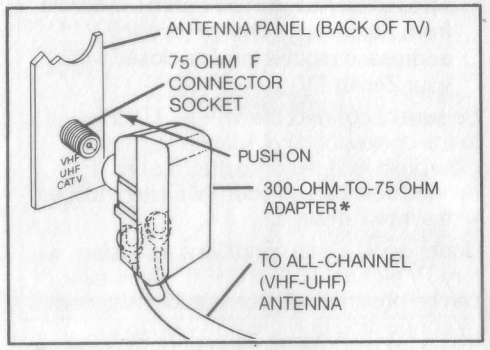
Determine if the Antenna Panel on back of the TV has either a) two VHF and two UHF terminals, or b) a 75 ohm "F" connector socket:



a) If there are two VHF and two UHF terminals on the Antenna Panel, you will need a 300 ohm VHF-UHF SIGNAL SPLITTER (connecting device). If not supplied with your antenna, the SPLITTER is available from your Zenith dealer as an optional extra. It separates the signals from your antenna and feeds the VHF signal to the VHF terminals of your TV, and the UHF signals to the UHF terminals. First connect the twin lead antenna cable to the SPLITTER input terminals as shown. Then connect the SPLITTER VHF and UHF antenna lead wires to the corresponding terminals on the back of the TV.



b) If there is a 75 ohm "F" connector socket on the Antenna Panel you must use the 300-ohm-to-75-ohm Adapter supplied with your TV. Connect the twin lead antenna cable to the Adapter as shown. Now push Adapter onto the 75 ohm "F" connector socket on the back of the TV.

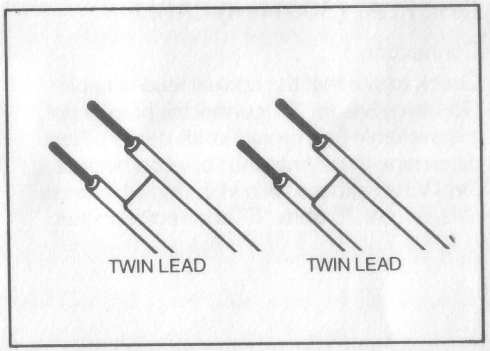


* Replace Adapter only with Zenith Part No. A-9521-02.

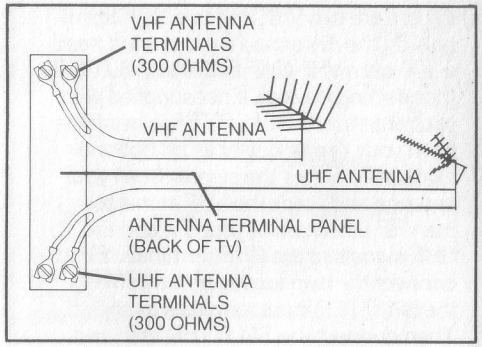
C. SEPARATE VHF AND UHF ANTENNAS WITH TWO FLAT CABLES.

Connection:

Determine if the Antenna Panel on the back of the TV has either a) two VHF and two UHF terminals, or b) a 75 ohm "F" connector socket:



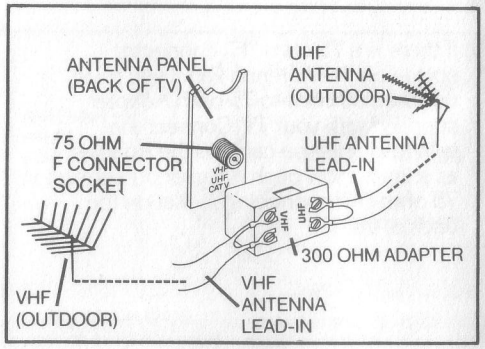
a) If there are two VHF and UHF terminals on the Antenna Panel, connect the VHF and UHF antenna lead-in wires to the corresponding terminals on the back of the TV as shown.



b) If there is a 75 ohm "F" connector socket, connect the VHF and UHF antenna lead-in wires to an Adapter (300 ohm), available from Zenith at no charge (see self-addressed request card enclosed with your Zenith TV).

Be sure to connect the VHF and UHF wires to the corresponding Adapter terminals. Now push Adapter onto the 75 ohm "F" connector in back of your TV. Fasten Adapter with screw if desired.

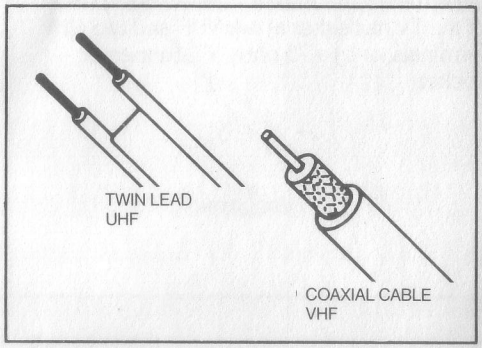
Under good signal conditions a satisfactory TV picture (UHF and VHF channels) can be obtained with the outdoor antenna by connecting only the VHF lead to the Adapter (300-ohm-to-75-ohm) supplied with your TV. Attach the Adapter as shown in the illustration at the bottom of page 1.



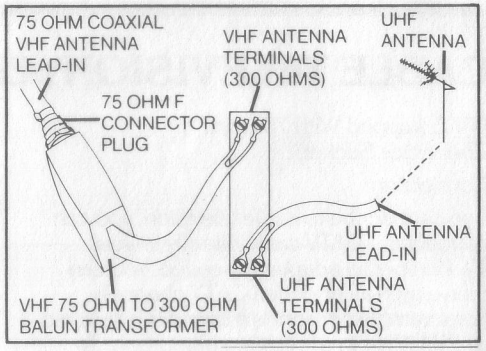
D. SEPARATE VHF AND UHF ANTENNA WITH ONE ROUND (75 ohm), ONE FLAT (300 ohm) CABLE

Connection:

Check to see that the coaxial lead-in cable (75 ohm) has an "F" connector plug (if not, it is available from your Zenith dealer). Next, determine if the Antenna Panel on back of the TV has either a) two VHF and UHF terminals, or b) a 75 ohm "F" connector socket:



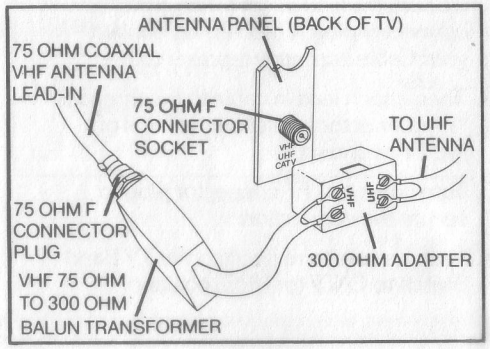
a) If there are two VHF and two UHF terminals on the Antenna Panel, you will need a 75 ohm-to-300 ohm Balun transformer (optional extra available at your Zenith dealer) as a connecting device to connect the 75 ohm coaxial VHF cable to the VHF terminals as shown. Connect the coaxial VHF cable to the Balun transformer and connect the transformer output leads to the VHF terminals on the TV Antenna Panel. Connect the UHF antenna leads to the UHF terminals on the TV Antenna Panel.



b) 1. If there is a 75 ohm "F" connector, connect the VHF 75 ohm lead-in directly to 75 ohm connector socket in back of TV as shown on page 3. Usually, this will produce a satisfactory picture on VHF and UHF channels.

If not...

2. You will need a 75-ohm-to-300-ohm Balun transformer (optional extra available at your Zenith dealer). Connect the coaxial VHF cable to the Balun transformer as shown. Connect the transformer output leads to the corresponding terminals on the 300 ohm Adapter. Connect UHF lead to UHF terminals on the same Adapter. Now push Adapter onto the 75 ohm "F" connector socket on the back of the TV. Fasten Adapter with screw if desired.



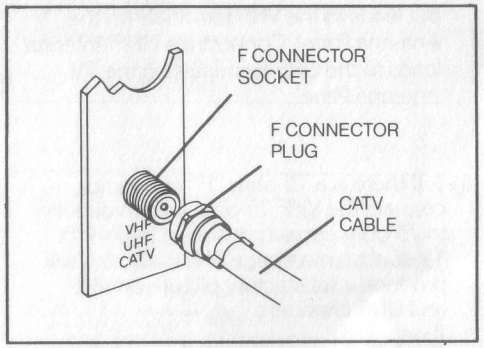
CABLE TELEVISION (CATV)

(TV Equipped With 75 Ohm "F" Connector Socket)

Connection:

If you subscribe to cable television, you can connect the CATV cable directly to your TV. No special adapter is needed. You can then watch all uncoded CATV channels. For scrambled channels a decoder is required as explained in a following paragraph. To connect the cable:

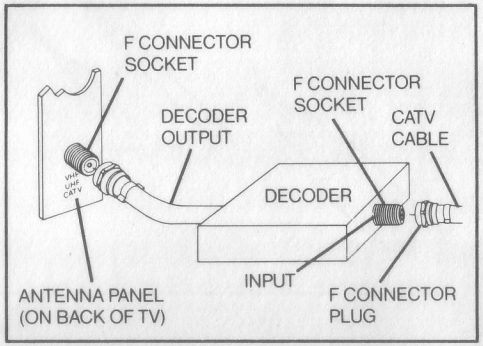
1. Be sure the lead-in cable has an "F" connector plug. If it does not, contact your Cable company representative.
2. Then attach lead-in cable to the threaded "F" connector socket on the back of the TV as shown.
3. Turn collar on "F" connector plug to secure the connection.
4. Next, be sure to re-position the TV Band Switch to CATV (or HRC) position.



CABLE TELEVISION (CATV) WITH DECODER (Optional – Supplied by Cable Company)

Connection:

1. Be sure the lead-in cable has an "F" connector plug as shown. If it does not, contact your Cable company representative.
2. Then attach lead-in cable to the "F" connector socket on the Decoder. (A Down Converter may be required for use with the Decoder in some installation areas.)
3. Attach "F" connector plug on cable from Decoder (supplied with Decoder) to "F" connector socket on the back of TV.



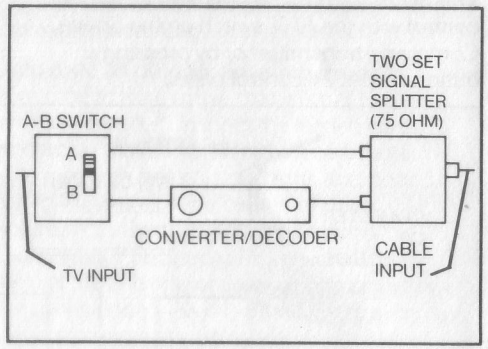
NOTE: There are many variations in Cable systems using Decoders and Converters. Check your local Cable company for special instructions.

REMOTE CONTROL TUNING

A. Cable TV Antenna Signal Input

With Space Command remote control, you have complete remote control of all TV channels carrying *uncoded* cable programs.

Many cable systems, however, supply *coded* (scrambled) programs on some channels. To view a scrambled program channel, you must use a decoder. The decoder must be switched manually. The Space Command remote control cannot switch the decoder. To retain the use of remote control on unscrambled channels, use a signal splitter and an A-B switch (available from your Zenith dealer). This will permit you to bypass the decoder with cable signals that are not scrambled. To decode and view scrambled channels, switch to the decoder and select the program on the decoder. (Cable systems vary – check with your Cable company.)



B. Inputs from Cable TV, Video Games, VCR's, Home Computers, Etc.

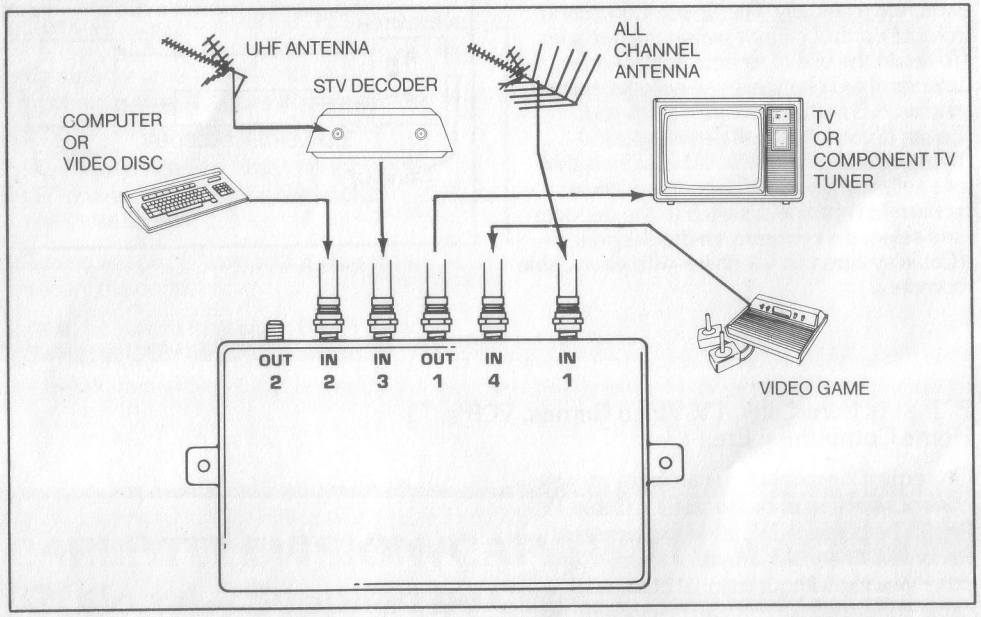
On some TV models, you can enjoy remote control selection of broadcast TV, Cable TV, Pay (Subscription) TV, or Video Cassette Recorder, Video Disc Player or Home Computer viewing without manual change of cable connections. This can be done by use of the Zenith Remote Antenna Switch Accessory available as an optional accessory from your Zenith dealer.

REMOTE ANTENNA SWITCH ACCESSORY

(for TVs With Antenna Switch Accessory Jack on Antenna Panel)

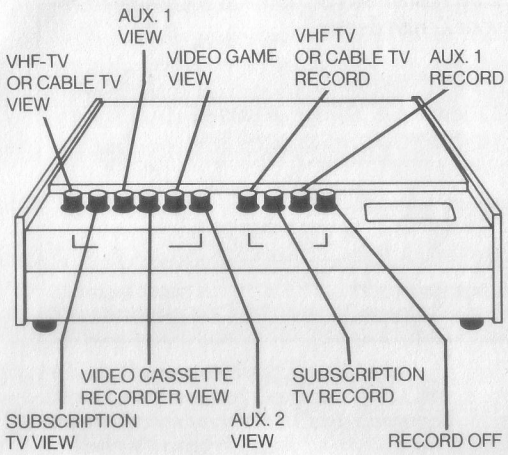
The Zenith Remote Antenna Switch Accessory permits you to connect up to four RF sources (antenna signal inputs) to your TV. This accessory can be operated by remote control with the ANT switch on the Space Command transmitter or by pressing a button on the TV control panel.

The illustration shows one of the many possible uses for this versatile unit. In use, the unit is connected to an "Antenna Switch Accessory" jack on the back of the TV. Full instructions are provided in the operating guide supplied with the Antenna Switch Accessory.



VIDEO ORGANIZER

The Zenith Video Organizer acts as a "Control Center" for your home video entertainment system. Separate input and output jacks allow complete connection of your TV and VHF antenna or Cable TV antenna, Subscription TV Decoder, Video Disc Player, Video Cassette Recorder, Video Game and Home Computer or other auxiliary equipment. Individual function buttons permit push-button selection of any one of six different program sources for immediate viewing, and any one of three different program sources for simultaneous recording. This accessory, shown here, is available from your Zenith dealer.



SOME THINGS TO KNOW ABOUT:

Indoor and Outdoor Antennas

A TV antenna is really a "net" set to catch waves transmitted by a TV station. A good picture on your television set depends on how well your antenna captures the waves radiated by the TV stations.

Your Zenith TV will work in most locations on an indoor or outdoor antenna. The quality of your picture may depend on a) the proper antenna, in good working order, b) how far you are from the television transmitters and, c) the nearness of such obstructions as tall buildings, towers, or mountains.

An outdoor antenna is recommended for most installations. It pulls in more signal to produce the best picture and reduces or eliminates problems created by weak reception.

If you live fairly close to transmitting stations in an area free of obstructions such as tall buildings, an indoor antenna may be quite satisfactory. You may use the indoor antenna supplied with some TV's or a separate, cabinet-top antenna.

If you have an outdoor antenna, check it from time to time to see that it is not bent or wind-damaged. Inspect the lead-in wires for cracks, broken wires, or other damage. Antennas with missing elements and poor lead-in wires are prime causes of poor picture reception. Replace the antenna or lead-in wires if necessary. Professional installation of the antenna or antenna components is recommended. As described in the subsequent paragraphs on antenna installation, it is hazardous work and can result in fatal or crippling falls.

When You Need A New Outdoor Antenna

If your TV roof antenna has been there ten years or more, it is probably oxidized, coated with grime, and possibly wind-damaged. The result may be a somewhat fuzzy TV picture lacking in color and even showing "ghosts." Also, antenna design improvements since your old antenna was installed may have made it obsolete.

People who have owned a TV for several years shrug off less-than-perfect pictures, blaming them on the age of the TV. They are pleased to discover that a new outdoor antenna suddenly brings their TV screen to life with bright, sharp, colorful pictures.

Selecting a New Outdoor Antenna

Local TV reception conditions vary greatly. Your best source of advice about the most effective antenna *for your area* is your Zenith dealer or Distributor-approved Zenith Service Center representative, whose recommendation will be based upon years of local experience.

Generally, the more elements in the antenna array, the more signal it can capture. Small VHF units may have only 8 elements. Large units for deep fringe area reception may have as many as 70 or more elements.

If you use two or more TVs on the same antenna, its signal must be divided between each TV with a signal splitter (optional) available from your Zenith dealer. If you operate more than one TV, the antenna may need to be a little larger.

Antenna Signal Boosters (Amplifiers)

If you have a severe fringe-area problem, the solution may be a signal booster (amplifier). The signal booster is installed between the antenna and the TV, usually next to the antenna, in an attic. It magnifies incoming signals to provide a better picture.

The signal booster is especially useful for motels, clubs and other places operating a number of TVs from one antenna, since it boosts signal strength sufficiently to provide a good picture on each TV, and saves the installation of additional antennas.

⚠ Installing An Outdoor Antenna

Installing an outdoor antenna is hazardous work. Extreme care must be used. Never work in the vicinity of electric power lines. Accidental contact with the power lines by a metal ladder, the metal antenna structure, or antenna wire could result in fatal shock.

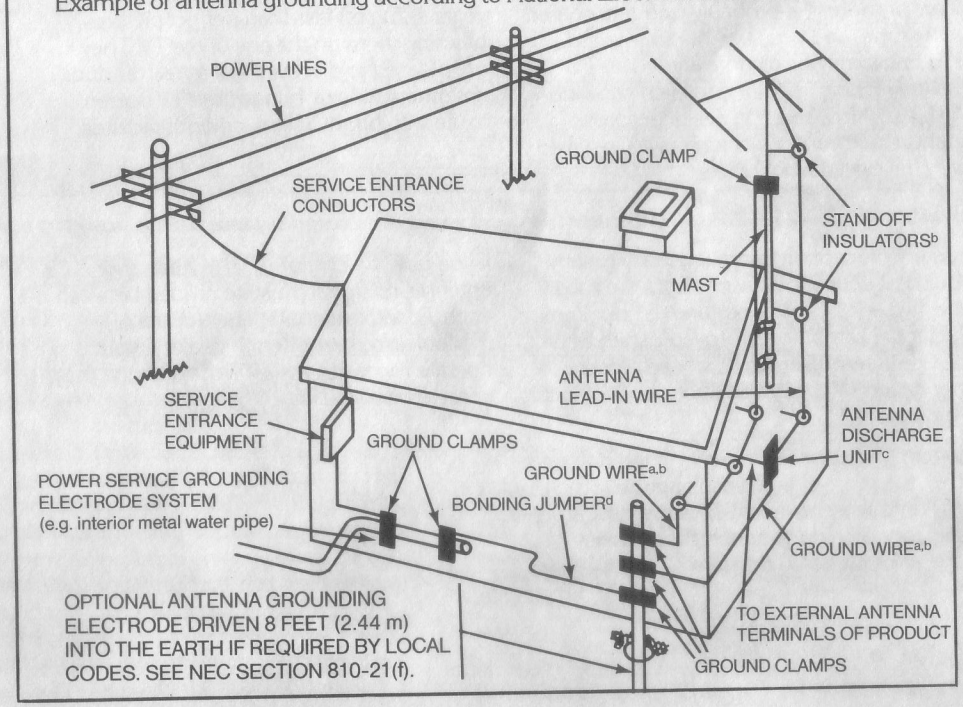
Also, handling a cumbersome antenna structure on a sloping roof is difficult and requires two persons. If you stumble or slip, a fatal or crippling fall could follow. Professional installation is recommended.

⚠ Grounding the Outdoor Antenna for Protection

An outside antenna and its mast or cable system connected to the TV must be grounded to provide some protection against lightning strikes and built-up static charges. Consult local electrical code and Section 810 of the National Electric Code, ANSI/NFPA No. 70-1984, which provides information with respect to proper grounding. Professional installation is recommended.

For additional protection during a lightning storm, or when your TV is left unattended for long periods of time, unplug it from the wall outlet and disconnect the antenna. You may prefer to install a line voltage Spike Suppressor and antenna Lightning Protector which are available from your Zenith dealer. This will prevent damage to the TV due to lightning and power-line surges.

Example of antenna grounding according to National Electrical code instructions



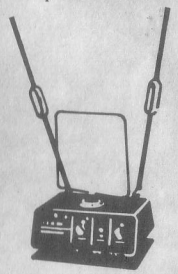
a. Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as a ground wire.
b. Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4-6 feet (1.22-1.83 m) apart.
c. Mount antenna discharge unit as close as possible to where lead-in enters house.
d. Use jumper wire not smaller than No. 6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21(j).

ZENITH ANTENNA AND ACCESSORY EQUIPMENT

Zenith TV antennas and antenna accessories are designed and constructed to provide you superior service and performance. A wide selection of antennas and their accessories are available through your Zenith dealer.

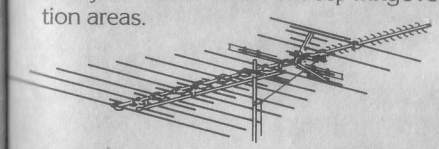
Chromatenna Indoor Antennas

All Chromatenna indoor models feature a 14-position switch for adjusting picture signals. Each has large 5-section VHF elements for signal capture. All models are designed to receive all channels – 2 through 83, UHF/VHF plus FM stereo.



Chromatenna Outdoor Antennas

Space age engineering has developed the finest television reception equipment available. Zenith Chromatenna II is available in VHF/UHF combination, VHF only or UHF only models, each designed to deliver peak area pictures. These range from VHF/UHF/FM antennas with as few as 17 elements for metro reception areas, to those with as many as 70 elements for deep fringe reception areas.



Accessory Equipment Available

A wide selection of antenna accessory equipment is also available through your local authorized dealer. They include:

- LINE VOLTAGE SPIKE SUPPRESSOR
- ANTENNA LIGHTNING PROTECTOR
- WIRE AND CABLE
  Packaged wire and cable for VHF and UHF TV transmission line, antenna rotors and other uses.
- ANTENNA ROTORS
  Rotors with fully automatic control for heavy duty and metro-suburban applications
- TV INTERFERENCE FILTERS:
  High-Pass Filter (Zenith #A-8477) for suppression of TV picture interference caused by some Commercial Citizen's Band, State Police, Paging Systems, and Amateur Radio Transmitters operating in the range of 0-52 MHZ.
  FM Filter (Zenith A-9452-01) for suppression of interference caused by near-by or local FM stations.
- RECEPTION AIDS
  Preamplifiers to increase signal levels.
  Broadband amplifiers.
  Signal Splitters/Coupler
  VHF-FM-UHF Splitter/Transformer
  Matching Transformer
  Cellular Telephone Filters
- MOUNTS
  Antenna Chimney Mounts
  Tripod Roof Mounts
- HARDWARE
  Standoffs
  Standoff Strapping
  Cable Clamps
  Screw Eyes